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**Kozumplik, Joanne (ASRC)**

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**From:** STIC-ILL  
**Sent:** Thursday, November 20, 2003 11:11 AM  
**To:** Kozumplik, Joanne (ASRC)  
**Subject:** FW: ILL Request

-----Original Message-----

**From:** Lehman, Karen  
**Sent:** Thursday, November 20, 2003 10:58 AM  
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For Elaine Gort  
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Cantor R. and Packer F. 1994. The Credit Rating Industry. Federal Reserve Bank of New York Quarterly Review 19(2)

Cantor R. 1995 Sovereign (sic) Credit Ratings Current Issues in Economics and Finance, Federal Reserve Bank of New York 1 (3)

Moody's Investors Service, 1995. Global Credit Analysis. London: IFR Publications.

Moody's Investors Service, 1996. Corporate Default Rates, 1970-1995. New York: Moody's Investor's Service.

Karen

Thanks

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# CURRENT ISSUES

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## Sovereign Credit Ratings

Richard Cantor and Frank Packer

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*Sovereign ratings are gaining importance as more governments with greater default risk borrow in international bond markets. But while the ratings have proved useful to governments seeking market access, the difficulty of assessing sovereign risk has led to agency disagreements and public controversy over specific rating assignments. Recognizing this difficulty, the financial markets have shown some skepticism toward sovereign ratings when pricing issues.*

In recent years, the demand for sovereign credit ratings—the risk assessments assigned by the credit rating agencies to the obligations of central governments—has increased dramatically. By reducing investor uncertainty about risk exposures, sovereign ratings have enabled many governments, some with prior histories of debt defaults, to gain access to international bond markets. This edition of *Current Issues* begins with some basic information about the uses and types of sovereign ratings, the development of the sovereign ratings business, and the history of sovereign defaults. We then examine two features of sovereign ratings that have often sparked controversy—agency disagreements over specific sovereign ratings and the relationship between sovereign ratings and market yields.

Our investigation reveals that on the whole, agency disagreements over sovereign ratings are quite common. In the case of below-investment-grade issues, Moody's and Standard and Poor's assign divergent ratings much more frequently to sovereign bonds than to corporate bonds. We believe that the prevalence of disagreements reflects both the relative inexperience of the agencies in rating sovereign credits and the difficulty of assessing the political and economic conditions that affect a country's creditworthiness.

Our analysis of the relationship between sovereign

ratings and market yields suggests that the financial markets recognize the difficulties inherent in measuring sovereign credit risk. The markets generally require much larger risk premia for sovereign debt issues than for similarly rated corporate bonds. Moreover, the rank-orderings of sovereign risks implied by market yields frequently differ from the rankings assigned by the agencies. Thus, although sovereign ratings have become a prerequisite for broad international bond market acceptance, their influence on specific market yields appears limited.

### Uses and Types of Sovereign Ratings<sup>1</sup>

Like other credit ratings, sovereign ratings are assessments of the relative likelihood a borrower will default on its obligations. Governments generally seek credit ratings in order to ease their access to international capital markets, where many investors, particularly U.S. investors, prefer rated securities over unrated securities of apparently similar credit risk. In the past, governments tended to seek ratings on their foreign currency obligations exclusively, because foreign currency bonds were more likely to be placed with international investors than domestic currency offerings. But in recent years, as international investors have increased their demand for bonds issued in currencies other than the traditional global currencies, more

sovereigns have been obtaining domestic currency bond ratings as well.

The credit ratings on a sovereign's foreign currency bonds at present never exceed, and are often lower, than the ratings on its domestic currency obligations. The rating agencies and investors reason that because governments have broad-ranging powers to tax domestic income and print domestic currency,<sup>2</sup> they may be better able to fulfill their domestic currency obligations.<sup>3</sup> Nonetheless, domestic currency bond defaults do occasionally occur when the authorities choose to avoid the political consequences of increased tax rates or debasement of the currency.

Sovereign ratings are accorded considerable attention not only because some of the largest issuers on the international capital markets are national governments, but also because these assessments affect the ratings of a large number of other borrowers of the same nationality. The agencies generally do not assign ratings to public or private sector issuers that are higher than their home country's sovereign rating; therefore, sovereign ratings influence the ratings given local municipalities, provincial governments, and private companies headquartered within the same country.

### The Development of the Sovereign Ratings Business

Although the rating agencies' current practice of assigning overall ratings for sovereign risk began only a few decades ago, Moody's has been rating bonds issued by foreign governments since 1919. International bond markets were very active in the early part of the twentieth century: by 1929, Moody's was rating bonds issued by roughly fifty central governments. The demand for sovereign ratings, however, abated with the onset of the Great Depression, and after World War II, the international bond markets came to a standstill.

In the 1970s, international bond markets revived, but demand for sovereign ratings was slow to materialize. As recently as ten years ago, only fifteen foreign

governments borrowed in U.S. capital markets and felt the need to obtain credit agency ratings. Because these governments were almost all pristine credits, their sovereign risk assessments were quite straightforward and noncontroversial. Other governments were able to obtain credit through other means. A few financially strong governments gained access to international capital through the Euromarkets without ratings. Less creditworthy sovereigns generally obtained international credit from banks, and a few issued privately placed bonds without credit ratings.

The sovereign ratings business took off in the late 1980s and early 1990s when weaker credits found market conditions sufficiently favorable to issue debt in international credit markets (Table 1). These governments increasingly tapped the Yankee bond market, where credit ratings are a de facto requirement. Consequently, the growth in demand for rating services has coincided with a trend toward assignment of lower quality sovereign credit ratings. Before 1985, most initial ratings were AAA/Aaa; in the 1990s, the median rating assigned has been the lowest possible investment grade rating, BBB-/Baa3.

With the increase in demand for ratings, agency sovereign rating activity has returned to pre-Depression levels. Today Moody's and Standard and Poor's each rate about fifty sovereigns. In the last few years, three additional rating agencies—Duff and Phelps, IBCA, and Thomson BankWatch—have ventured into the sovereign rating business as well.

### Sovereign Defaults

Sovereign lending has historically been a risky business. A burst in sovereign lending in the 1920s—the closest precedent for the recent spiral in sovereign bond issuance—ended with a wave of defaults during the Great Depression. Twenty-one out of fifty-eight nations defaulted on their international bonds between 1930 and 1935; another four had already defaulted by 1929 (Suter 1992). On a volume basis, roughly 70 percent of all sovereign debt (excluding Canadian debt) issued in the United States between 1926 and 1929 defaulted before the end of 1937 (Mintz 1952). By comparison, only about 30 percent of U.S. corporate debt issued between 1926 and 1929 defaulted before 1944 (Hickman 1958). Moody's was one of many parties taken by surprise by the extent of the sovereign default wave: a majority of the defaulting countries had investment grade ratings from this agency in 1929 (Moody's 1981).

Because the business of rating sovereign credits has only recently grown to a scale comparable to its prewar highs, there is no significant track record of default for

**Table 1**  
**The Growth of the Sovereign Ratings Business**

Year Rating Was First Assigned by S&P or Moody's	Number of Newly Rated Sovereigns	Median Rating Assigned (S&P/ Moody's)
Pre-1975	3	AAA/Aaa
1975-79	9	AAA/Aaa
1980-84	3	AAA/Aaa
1985-89	19	A/A2
1990-94	15	BBB-/Baa3

Sources: Standard and Poor's; Moody's Investors Service.

rated issues since the 1930s. Recent history suggests, however, that sovereign lending remains risky. A Standard and Poor's survey of seventy-two governments with outstanding domestic and foreign currency debt found that thirty had defaulted at least once on domestic or foreign currency debt since 1970 (Beers 1995). Although these sovereigns had not been rated by an internationally recognized rating agency before their defaults,<sup>4</sup> nine have subsequently been rated by Moody's and Standard and Poor's.

The frequency of default has varied with the type of debt. Table 2 breaks down sovereign defaults since 1970 into defaults on domestic currency bonds, foreign currency bonds, and foreign currency bank loans. Clearly, defaults on foreign currency obligations have been more common (thirty-three) than defaults on domestic currency obligations (nine). Domestic currency defaults have usually been the result of an overthrow of an old political order—as in Russia and Vietnam—or the byproduct of dramatic economic adjustment programs aimed at curbing hyperinflation—as in Argentina and Brazil. Twenty-nine of the thirty-three defaults on foreign currency were through

a rescheduling of bank debt. Standard and Poor's has treated these reschedulings as defaults because the reschedulings ultimately imposed losses on creditors. Of the four sovereigns that defaulted on foreign currency bonds, only one—Zimbabwe—did so on a bond that was publicly traded and internationally held.

### Differences in Sovereign Ratings

Moody's and Standard and Poor's frequently disagree on specific sovereign ratings assignments. In the wake of Mexico's recent financial crisis, the financial press noted that Standard and Poor's had been considerably more optimistic than Moody's in 1994, giving Mexico a BB+ rating with a positive outlook for upgrade, while Moody's rated Mexico's obligations Ba (Branston 1995). Standard and Poor's has subsequently downgraded Mexico, eliminating the difference in ratings. The original disagreement, however, was notable, although not particularly large compared with other ratings differences between the agencies.

In fact, "split ratings" at the whole letter grade occur quite frequently, leaving investors uncertain about the credit risks of the governments in question. For example, Standard and Poor's gives South Africa and Poland below-investment-grade ratings of BB, while Moody's assigns both countries investment-grade ratings at Baa3. In other cases of divided ratings, Moody's has been more severe than Standard and Poor's: current ratings for Colombia (BBB-/Ba1) and Argentina (BB-/B1) have Moody's on the low side of ratings splits. Although split ratings for sovereigns when both are above the investment-grade cutoff are less common, the case of China, rated BBB by Standard and Poor's and A3 by Moody's, stands out. Standard and Poor's is evidently more troubled than Moody's by the credit risks stemming from the lack of transparency in China's markets and the diffuseness of the power structure (South China Morning Post 1994).

**Measuring the Frequency of Agreement.** We can obtain a more precise idea of the prevalence of ratings differences by comparing the frequency of agreement between Moody's and Standard and Poor's in their ratings of sovereign credits, on the one hand, and corporate credits, on the other. In Table 3, we quantify the differences across foreign currency ratings assigned to 48 countries as of June 9, 1995, and across the ratings of 1,168 U.S. corporations as of year-end 1993. Sovereigns tend to be more highly rated than corporate credits on average. About 44 percent are rated AAA/Aaa or AA/Aa by Standard and Poor's and Moody's, compared with only 12 percent for U.S. corporations; only 29 percent of sovereigns are below investment grade, compared with 40 percent of all U.S. corporations.

**Table 2**  
**Sovereign Debt Defaults since 1970**

Issuer	Year of Default		
	Local Currency Debt	Foreign Currency Bond Debt	Foreign Currency Bank Debt
Argentina	1982/89/90		1982
Bolivia			1980
Brazil	1986/89/91		1983
Bulgaria			1990
Costa Rica		1989	1983
Cote d'Ivoire			1985
Dominican Republic			1982
Ecuador			1983
Honduras			1981
Iran			1978/92
Iraq			1990
Jamaica			1978
Mexico			1982
Morocco			1983
Myanmar (Burma)	1984		
Nicaragua			1983
Nigeria			1983
Panama		1987	1983
Peru			1978
Philippines			1983
Poland			1981
Romania			1981
South Africa			1985
Turkey			1978
Uruguay			1983
USSR/Russia	1993		1991
Venezuela			1982
Vietnam	1975		1985
Yugoslavia		1992	1983
Zimbabwe		1980	

Source: Beers 1995.

Table 3

**Comparing Sovereign Foreign Currency Ratings and U.S. Corporate Bond Ratings**

Broad Rating Categories	Share of Total		Rated Same by Moody's and Standard and Poor's	
	Sovereigns (Percent)	Corporates (Percent)	Sovereigns (Percent)	Corporates (Percent)
AA/Aa or above	44	12	67	53
Other investment grade	27	48	56	36
Below investment grade	29	40	29	41

Sources: Standard and Poor's; Moody's Investors Service.

Note: The sample consists of 48 sovereigns rated jointly by Moody's and Standard and Poor's as of June 9, 1995, and 1,168 corporations rated jointly by Moody's and Standard and Poor's as of year-end 1993.

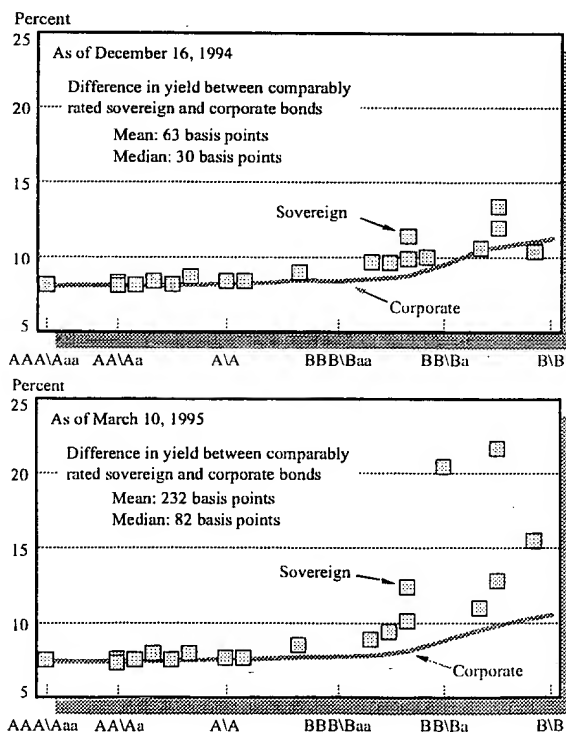
Ratings differences between Moody's and Standard and Poor's are roughly similar overall for sovereigns and corporates, but striking differences appear within broad rating categories. Sovereign ratings of the two agencies are often identical in the high-investment-grade area, reflecting in part the relatively large portion of the sovereign sample consisting of AAA/Aaa credits, such as the United Kingdom, the United States, France, Japan, and Germany. The two agencies agree 67 percent of the time on sovereigns rated AA/Aa and AAA/Aaa, whereas they only agree 53 percent of the time on corporate credits in this broad category. In the below-investment-grade area, however, the agencies assign identical ratings 41 percent of the time for corporates but only 29 percent of the time for sovereigns. Thus, differences of opinion between the agencies for low-quality credits appear greater for sovereigns than for corporates.

**Why Sovereign Ratings Differ across Agencies.** It is probably fair to conclude that the greater frequency of disagreements over below-investment-grade sovereign ratings is evidence of greater uncertainty in the measurement of this type of risk. Such uncertainty is, however, understandable. As we have seen, the modern sovereign ratings business is a relatively recent phenomenon, and the agencies' lack of experience in this area likely contributes to divergent assessments. Moreover, measuring sovereign credit risk is a difficult task, in many ways more difficult than measuring the credit risk of U.S. corporations. In analyzing the credit risk of governments, the agencies must consider factors that not only affect solvency, but also those that may independently affect the willingness to pay,<sup>5</sup> such as the stability of political institutions, social and economic cohesion, and integration into the world economic system. It is not surprising, then, that opinions

about the measurement and weighing of such qualitative country risk factors can differ greatly among the rating agencies.

**Market Yields and Sovereign Ratings**

To what extent are the greater difficulties of measuring sovereign risk reflected in the relationship between sovereign ratings and market yields? We do find a positive relationship between the yields on sovereign bonds and the yields on similarly rated U.S. corporate securities, but the correlation is an inexact one. The chart below presents yields on the outstanding U.S. dollar bonds of nineteen sovereigns and yields on indicative U.S. corporate bonds, and maps each of these yields against the contemporaneous credit ratings assigned by Standard and Poor's and Moody's.<sup>6</sup> The top panel presents these data for December 16, 1994 (just before the Mexican financial crisis), and the bottom panel for March 10, 1995 (during its aftermath). Although the ordering of market yields of investment-

**Yields on Sovereign and Corporate Bonds Adjusted to Five-Year Maturities**

Sources: Bloomberg L.P.; J.P. Morgan; Salomon Brothers.

Note: The countries whose sovereign bonds are presented in the chart are Argentina, Brazil, China, Colombia, Finland, Greece, Hungary, Italy, Japan, Korea, Malaysia, Mexico, the Philippines, Portugal, South Africa, Spain, Sweden, Thailand, and Turkey.

grade sovereign debt is highly correlated with credit ratings for both periods, the correlation is lower for our sample of non-investment-grade sovereigns, where numerous disagreements between markets and the agencies are clearly visible.<sup>7</sup>

Both panels of the chart indicate that sovereign bonds typically trade at higher yields than comparably rated U.S. corporate bonds. Mean and median sovereign spreads over comparable corporates for our sample are 147 and 50 basis points, respectively. Indeed, thirty-six of the thirty-eight sovereign observations are priced at higher yields than comparable corporate averages. Another regularity is that the gap between sovereign and corporate yields increases as ratings quality declines. (The mean of the spreads over corporates increases from 29 to 310 basis points, and the median from 11 to 172 basis points, when one moves from an investment-grade subsample of sovereigns to a non-investment-grade subsample.)

The two panels of the chart highlight the dramatic movement in yields since the Mexican crisis and show that sovereign spreads over comparable corporates are not only consistently positive, but also highly volatile. Between the two dates, the gap between the market yields on sovereign credits and similarly rated corporate credits widened for fifteen of the nineteen bonds, including all eight of the below-investment-grade obligations. The mean and median spread over corporates rose 169 and 52 basis points, respectively. Again, the non-investment-grade credits exhibited the most striking behavior, the mean and median spreads rising 397 and 257 basis points, respectively.

Of course, it is not unusual for similarly rated classes of bonds to trade at different yields.<sup>8</sup> Such differences may be explained by a variety of factors. In this case, U.S. investors may simply have required a premium to invest in cross-border securities, or expected recoveries on defaulted sovereign debts may have been much lower than on defaulted U.S. corporates.<sup>9</sup>

Most likely, however, these differences in yields arose simply because financial markets are more pessimistic, on average, about sovereign credit risks than are the rating agencies. Such differences of opinion between the market and the rating agencies over absolute credit risk appear most extreme for below-investment-grade credits, the same area in which disagreements between the agencies over relative credit risks have already been shown to be most common.

## Conclusion

Our overview of sovereign ratings gives particular emphasis to two issues—the differences among the agencies in the assessment of sovereign risk and the

influence of sovereign ratings on the markets. When comparing Moody's and Standard and Poor's ratings, we have found substantially more disagreement between the agencies in their assessments of credit risk for low-quality sovereigns than for low-quality U.S. corporate credits. We suggest that such disagreements owe much to the subjectivity of many aspects of sovereign risk measurement and the relative youth of the modern sovereign rating business.

Our examination of market yields on selected sovereign debt issues indicates that the investor community not only frequently disagrees with the agencies over the rank-ordering of credit risks, but also shows considerably more pessimism in its absolute assessment of the level of credit risk in the sovereign sector. Thus, although sovereign ratings help issuers gain access to the international bond markets, the market appears to regard sovereign ratings with some skepticism when pricing issues.

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## Notes

1. For a broad discussion of the history and economics of the credit rating industry, see Cantor and Packer (1994).
2. Although some might consider pure money financing of domestic currency debts and the subsequent decline in the purchasing power of debt service payments a type of default, the rating agencies categorize this threat as market risk rather than credit risk.
3. The rating agencies differ in the relative distinctions they make between domestic and foreign currency credit risks. In particular, Moody's has generally been more reluctant than Standard and Poor's to assign domestic currency ratings more than one or two notches higher than foreign currency ratings (Purcell et al. 1993). In fact, before World War II, Moody's often assigned higher sovereign ratings for foreign currency bonds than for domestic currency obligations, probably in the belief that international political considerations would create greater pressures to repay foreign currency bonds, which were largely held by cross-border investors.
4. The one exception is Venezuela, which defaulted on foreign currency bank debt in 1982 while maintaining a AA rating from Standard and Poor's on bonds on which it did not default.
5. An important distinction between sovereign and corporate debt is that creditors are less able to claim significant assets in the event of a sovereign default. For theoretical discussions, see Eaton, Gersovitz, and Stiglitz (1986) and Bulow and Rogoff (1989). For empirical work on the importance of factors representing willingness to pay, see Lee (1993).
6. When different, the Moody's and Standard and Poor's ratings are averaged. The corporate bond yields are indicative quotes on five-year industrial bonds taken from Bloomberg. The yields on the sovereign bonds have all been adjusted to five-year maturities by adding their risk spreads over Treasuries of comparable maturity to the prevailing five-year Treasury bond yield.

(Notes continued)

7. Correlations between ratings and yield orderings as measured by the Pearson-product moment correlation coefficients were 0.92 and 0.84, respectively, for the investment-grade sample in 1994 and 1995, and 0.42 and 0.56 for the non-investment-grade sample in the same years.

8. For example, looking at Moody's ratings in 1977-92 and related credit spreads, Longstaff and Schwartz (1994) found that the mean credit spreads over Treasuries were 45, 47, 43, and 24 basis points higher for utilities than for industrials at the Aaa, Aa, A, and Baa ratings levels, respectively.

9. Standard and Poor's states explicitly that it does not consider expected recovery values in its rating policies. In contrast, Moody's shows some willingness to take recovery values into account. Note that differences in liquidity are unlikely to explain the average yield differences observed in the chart because the specific sovereign issues studied there are quite large and relatively liquid.

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## About the Authors

Richard Cantor is an assistant vice president and Frank Packer an economist in the International Finance Function of the Research and Market Analysis Group.

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